



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,425	01/02/2002	Mark A. Bauman	KE2-173	6981
21567	7590	06/20/2005	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			MILLER, ROSE MARY	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

S

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/038,425	BAUMAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rose M. Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 02 January 2002.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 34-47 is/are allowed.
- 6) Claim(s) 1,4-6,10,11,12,15-17,21,23,26-28,32 and 48 is/are rejected.
- 7) Claim(s) 2-3 7-9 11 13-14 18-20 22 24-25 29-31 33 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 1/2/02 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/2/02</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 43-51 been renumbered as claims 40-48. This problem arose, as the originally filed application did not have claims 40-42 presented.

### ***Drawings***

2. The drawings are objected to because empty diagram boxes are impermissible under 37 CFR §1.83(a) which recites as follows:

*"The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)." (Emphasis added by Examiner)*

The empty diagram boxes 5, 12, 20, 25, 13, 30, 31, 35, 37, 46, 47, 60, 62, 63, 64, 65, 66, 67, 81, 90, 91, 94, 132, 163, 165, 174, 186, 187, 188, 189, 196, 197, 198, 199, 200, and 201, found in Figures 1, 2, 3, 7, 8, 9, and 10 of the drawings, must be labeled with an appropriate descriptive phrase in addition to the reference legend all ready present. Appropriate correction is required.

Replacement drawing sheets including the correction are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 4-6, 10, 12, 15-17, 21, 23, 26-28, 32, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lewiner et al. (US 4,553,089)**.

**Lewiner et al.** discloses an acoustic generator for generating acoustic energy: an article located in receiving relation relative to the acoustic energy to receive at least a portion of the acoustic energy and at least some of the acoustic energy being converted into electromagnetic energy by the article, a sensor (3) for detecting at least some of the electromagnetic energy generated by the conversion of the acoustic energy; and a

processor operably coupled with the sensor for determining defects within the moving article.

With regards to claims 1, 12, 23, 32, and 48, **Lewiner et al.** fails to disclose a plurality of articles and the processor differentiating between the articles based upon the electromagnetic energy sensed. **Lewiner et al.** teaches at column 1 lines 5-13 that the "sheet" of the disclosed invention could be a sheet, a tape, a disk or a drum. As the test object is moving as it is being tested, it would have been obvious to one or ordinary skill in the art to provide for the testing of a "plurality of articles" instead of the "sheet" disclosed, as **Lewiner et al.** clearly intends the "sheet" to encompass any number of testing objects which can be moved along the testing apparatus such that the properties of the test subject can be determined as it is moved along. Furthermore, **Lewiner et al.** discloses at column 1 lines 25-42 that the "measurement" is the determination of "a parameter, exploited immediately, without display, for recording purposes, automatic correction, alarm or other purposes". Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the invention of **Lewiner et al.** to test a plurality of articles and to differentiate the plurality of article based upon the sensed electromagnetic energy as it is clear **Lewiner et al.** meant to encompass any form of test subject which could be tested by the disclosed apparatus and that the system disclosed could easily handle more than a single test subject flowing past the sensors. Furthermore, one of ordinary skill in the art would know to utilize the measured "parameter" to determine faults or defects or unwanted articles within the plurality of articles such that those articles could be removed from the stream of articles.

As for claims 4, 5, 6, 15, 16, 17, 26, 27, and 28, **Lewiner et al.** discloses in Figures 2 and 3 utilizing a plurality of acoustic transducers which direct the acoustic energy at a plurality of angles with respect to the direction of the product stream (F).

As for claims 10, 21, and 32, **Lewiner et al.** discloses a plurality of acoustic transducers which operate in a pulse mode which allows for the measurement to be made during very short times which include the instants of time when the local deformations of the sheet are produced. Therefore, the system of **Lewiner et al.**

Art Unit: 2856

inherently does not operate the acoustic transducers during the time in which the articles convert the emitted acoustic energy into electromagnetic energy (time during which the local deformations are formed).

***Allowable Subject Matter***

7. Claims 2-3, 7-9, 11, 13-14, 18-20, 22, 24-25, 29-31, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 34-47 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest an apparatus for differentiating acceptable and unacceptable articles in a food product stream comprising, in combination with the other recited elements, an acoustic generator for emitting acoustic energy at the product stream, the product stream which converts the acoustic energy into electromagnetic energy based upon the electro-mechanical conversion efficiencies of the plurality of articles, a sensor for detecting at least some of the electromagnetic energy generated by the conversion and a processor for differentiating between the acceptable and unacceptable articles based on their respective electro-mechanical conversion efficiencies.

The closest prior art does teach monitoring a product stream by measuring either the backscatter light when light is utilized to test the stream or backscatter ultrasound when ultrasound is utilized to test the stream (see **Bond et al. (US 6,786,096 B2)**). And while the properties of bone which allow the conversion of acoustic and/or ultrasound energy to electromagnetic energy are known, there is no teaching or suggesting of measuring the ensuing electromagnetic energy in a remote way as the article under test is flowing underneath the electromagnetic sensor in a product stream.

Art Unit: 2856

10. Applicant is cautioned about placing the objected claims into independent form. Applicant should be careful not to rewrite the claims such that they turn into substantial duplicates of those claims all ready allowed. Should the newly rewritten claims become substantially duplicates of those all ready allowed, they will be rejected under the Double Patenting doctrine in the office action following such rewriting.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**O'Brien (US 5,059,909)** discloses determining particle size and electrical charge.

**Cannon et al. (US 5,245,290)** discloses a device for determining the size and charge of colloidal particles by measuring electroacoustic effect.

**O'Brien (US 5,616,872)** discloses particle size and charge measurement in multi-component colloids.

**Dukhin et al. (US 6,109,098)** discloses particle size distribution and zeta potential using acoustic and electroacoustic spectroscopy.

**Bond et al. (US 6,786,096 B2)** discloses a system and technique for detecting the presence of foreign material in a stream of articles.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM  
14 June 2005



Hezron Williams  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800